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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,309	02/26/2004	Pyung-Lae Kim	IK-0062	3428

34610 7590 07/20/2006

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EXAMINER

WATKO, JULIE ANNE

ART UNIT	PAPER NUMBER
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2627

DATE MAILED: 07/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/786,309

Applicant(s)

KIM, PYUNG-LAE

Examiner

Julie Anne Watko

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02/26/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>07/30/2004</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.
2. Applicant cannot rely upon the foreign priority papers to overcome any rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Claim Objections

3. Claim 14 is objected to because of the following informalities:
Claim 14 ends with a semicolon. The Examiner suggests a period.
Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.
5. Claims 1 and 7-8 are rejected under 35 U.S.C. 102(e) as being anticipated by Watanabe et al (US PAP No. 2003/0202447 A1).

As recited in claim 1, Watanabe et al show a flexible cable (see Fig. 15A, for example), comprising: a flexible cable main body (including 15, 17 and 19) having one end 15a configured to connect to a first part and the other end 17a configured to connect to a second part on a side

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opposite to the first part and configured to transmit signals between the first and second parts, wherein at least one (the second) of the first and second parts is movable; and a folded portion (see 15b and 15c) formed by folding a portion of the cable main body so that two opposing faces are in contact with each other.

As recited in claim 7, Watanabe et al show a straight portion (near 15a but not overlapped by 15c) and a curved portion 17 relatively longer than the straight portion.

As recited in claim 8, Watanabe et al show a disk drive 11.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al (US PAP No. 2003/0202447 A1).

Watanabe et al show a disk drive as described above for claims 1 and 7-8.

As recited in claim 2, Watanabe et al are silent regarding a folded-state maintaining device configured to maintain a folded state of the folded portion.

Folded-state maintaining devices are known in the art. Specifically, adhesives, tapes, folded plates and clips with insertion slots are known as recited in claims 3-6.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add an adhesive, tape, folded plate or clip as a folded state maintaining device. The rationale is as follows: one of ordinary skill in the art would have been motivated to prevent

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unfolding of 15b and 15c so as to preserve the compactness of the device while avoiding interference with other parts of the device as is apparent to a person of ordinary skill in the art.

8. Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishi (US Pat. No. 6469970 B2).

As recited in claims 9 and 11, Nishi shows a flexible cable 12, comprising: a first end 15 configured to be connected to a first part 14 and a second end 13 configured to be connected to a second part 11, so as to transmit signals between the first and second parts, at least one 11 of the first and second parts being movable; and a folded portion (“flexible cable 12 includes a fold portion”, see col. 4, lines 2-3) formed by folding a portion of the flexible cable.

As recited in claim 9, Nishi is silent regarding whether the folded portion does not deviate from vertical alignment with the first part.

There is no invention in relocating known parts, when the functioning of the apparatus is not changed by the relocation. In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to relocate the known parts of Nishi and arrive at the claimed arrangement in the process of routine design choice and experimentation/optimization. The rationale is as follows: one of ordinary skill in the art would have been motivated to achieve a compact arrangement for space efficiency as is notoriously well known in the art.

As recited in claim 11, Nishi is silent regarding at least one curved portion formed by folding a portion of the flexible cable, wherein a vertex of the curved portion does not deviate from vertical alignment with the first part.

See teachings, rationale and motivation above for claim 9.

As recited in claims 10 and 12, Nishi shows a disk drive (see Fig. 1, for example).

9. Claims 13-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishi (US Pat. No. 6469970 B2) in view of Watanabe et al (US PAP No. 2003/0202447 A1).

The Examiner notes that the folded portion for purposes of this rejection is different from the “fold portion” disclosed in the reference (see col. 4, lines 2-3). Rather, the “fold portion” disclosed in the reference is at least part of the claimed curved portion.

As recited in claim 13, Nishi shows a disk drive (see Fig. 1, for example) comprising a main base 2, a pickup base 1 installed on the main base and provided with parts (including 8 and 10) for recording and reproducing signals on and from a disk, including an optical pickup 8 linearly movable within a predetermined region; a board 14 fixedly installed on a side of the main base and configured to control driving of the parts including the optical pickup; and a flexible cable.

As recited in claim 13, Nishi is silent regarding a folded portion formed by folding a portion of a flexible cable main body wherein two strips of cable extend from the folded portion in the same direction and are connected, respectively, to the optical pickup and the board so as to transmit signals therebetween.

As recited in claim 13, Watanabe et al teach the folding of a flexible cable (see 15b and 15c).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have added a fold to the flexible cable of Nishi as taught by Watanabe et al, in a location from which two strips extend in the same direction in the process of routine design choice and experimentation/optimization. The rationale is as follows: one of ordinary skill in the

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art would have been motivated to reduce the space by reducing a dimension of the drive as taught by Watanabe et al (“As shown in FIG. 14B, the first printed board 15A is folded along a center line 80 extending in the A and B directions so that a region 15c on the right side of the center line 80 is superimposed on a region 15b on the left side of the center line 80. Thereby, the horizontal dimension or width of the first printed board 15 is reduced by half so as to be employable in the disk unit 11 reduced in space”, see ¶ 0089).

As recited in claim 14, Nishi shows a tray (see recess 6 in movable part 1) configured to move inside (see Fig. 3) and outside (see Fig. 2) the main base 2 so as to move the disk between a loading position and an unloading position.

As recited in claim 15, Nishi shows straight portion (see upper part of 12 in Fig. 1) and curved portion (see lower part of 12 in Fig. 1).

As recited in claim 16, Nishi is silent regarding the recited location of the folded portion.

There is no invention in relocating known parts, when the functioning of the apparatus is not changed by the relocation. In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to arrive at the claimed location of folded portion in the course of routine design choice and experimentation/optimization. The rationale is as follows: one of ordinary skill in the art would have been motivated to arrive at the claimed location in order to achieve compactness and to reduce the space of the drive housing while maintaining the full stroke of the tray as is readily apparent to a person of ordinary skill in the art.

As recited in claim 17, Nishi is silent regarding whether the curved portion is relatively longer than the straight portion.

There is no invention in changing the relative dimensions of known parts, absent unexpected results due to the claimed relative dimensions. Gardner v. TEC systems, Inc., 220 USPQ 777 (Fed. Cir. 1984).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to arrive at the claimed relative dimensions in the course of routine experimentation and optimization. The rationale is as follows: one of ordinary skill in the art would have been motivated to achieve an appropriate stroke of tray movement, while achieving appropriate compactness of the apparatus, and to avoid interference of internal parts as is notoriously well known in the art.

As recited in claim 18, Nishi is silent regarding a folded-state maintaining device configured to maintain a folded state of the cable main body. As recited in claims 19-22, Nishi is silent regarding the specific forms of folded-state maintaining devices.

See teachings, rationale and motivation above for claims 2-6.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Takahashi et al (US PAP No. 20040205785) is an English language equivalent of WO 200284665, and teaches the use of adhesive tape (see especially ¶ 0019, "attachment is based on adhesive bonding of the proximal-end side portion and the turn portion by means of a double-coated tape, fixing by means of raised claws, or fixing by means of screws. In one case, only the lower surface of the turn portion is fixed. In another case, the lap portion between the distal-end

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side portion and the intermediate portion that is created by bending the distal-end side portion is fixed besides the lower surface”).

Minase et al (US Pat. No. 6981271 B2) show a disk device comprising FPC 9.

Suzuki et al (US Pat. No. 5923501) show a disk device comprising FCB 2, FPC holder 3, head IC 20 and chip components 22 (see especially Figs. 8 and 10A).

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julie Anne Watko whose telephone number is (571) 272-7597. The examiner can normally be reached on Monday through Thursday, noon to 10PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dwayne D. Bost can be reached on (571) 272-7023. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Julie Anne Watko, J.D.
Primary Examiner
Art Unit 2627

July 16, 2006
JAW

